EVVOSEMI®
THINK CHANGE DO

ESD TVS MOS LDO Diode Sensor DC-DC

Product Specification

Domestic Part Number	IRF5803
Overseas Part Number	IRF5803
Equivalent Part Number	IRF5803

P-Channel Enhancement Mode Field Effect Transistor

General Description

- High density cell design for ultra low Rdson
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation

Applications

- Load switch
- PWM application

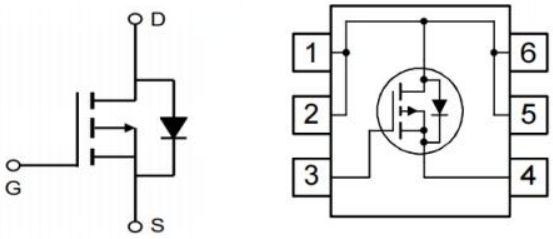
Product Summary

V_{DS} = -60V,I_D = -6.0A

$R_{DS(ON)}$ < 180 mΩ @ V_{GS}=-10V

$R_{DS(ON)}$ <266mΩ @ V_{GS}=-4.5V

SOT23-6L Pin Configuration



Absolute Maximum Ratings (T_A=25℃unless otherwise noted)

Parameter	Symbol	Maximum	Unit
Drain-source Voltage	V_{DS}	-60	V
Gate-source Voltage	V_{GS}	±20	V
Drain Current	I_D	-6.0	A
Pulsed Drain Current [A]	I_{DM}	-15	A
Total Power Dissipation @ T_A=25℃	P_D	1.4	W
Thermal Resistance Junction-to-Ambient [B]	$R_{\theta JA}$	90	℃/W
Junction and Storage Temperature Range	T_J ,T_{STG}	-55～+150	℃

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Electrical Characteristics (T_J=25℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}= 0V, I_D=-250μA	-60			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-48V,V_{GS}=0V,T_C=25℃			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}= V_{GS}, I_D=-250μA	-1		-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}= -10.0V, I_D=-1.5A		160	180	mΩ
		V_{GS}= -4.5V, I_D=-1.0A		195	266	
Diode Forward Voltage	V_{SD}	I_S=-1A,V_{GS}=0V			-1.3	V
Maximum Body-Diode Continuous Current	I_S				-2.0	A
Dynamic Parameters						
Input Capacitance	C_{iss}	V_{DS}=-15V,V_{GS}=0V,f=1MHZ		531		pF
Output Capacitance	C_{oss}			59		
Reverse Transfer Capacitance	C_{rss}			38		
Switching Parameters						
Total Gate Charge	Q_g	V_{GS}=-4.5V,V_{DS}=-20V,I_D=-1.5A		4.6		nC
Gate Source Charge	Q_{gs}			1.4		
Gate Drain Charge	Q_{gd}			1.62		
Turn-on Delay Time	$t_{D(on)}$	V_{GS}=-10V,V_{DS}=-15V, I_D=-1A, R_{GEN}=3.3Ω		17.4		ns
Turn-on Rise Time	t_r			5.4		
Turn-off Delay Time	$t_{D(off)}$			37.2		
Turn-off Fall Time	t_f			2.4		

A. A.Pulse Test: Pulse Width≤300us,Duty cycle ≤2%.
B. Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

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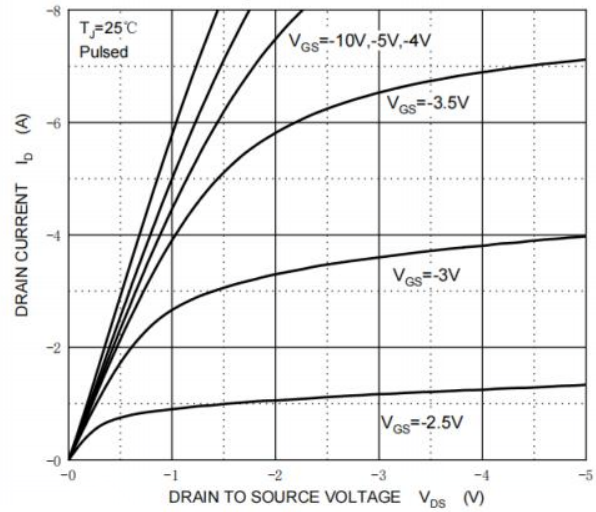
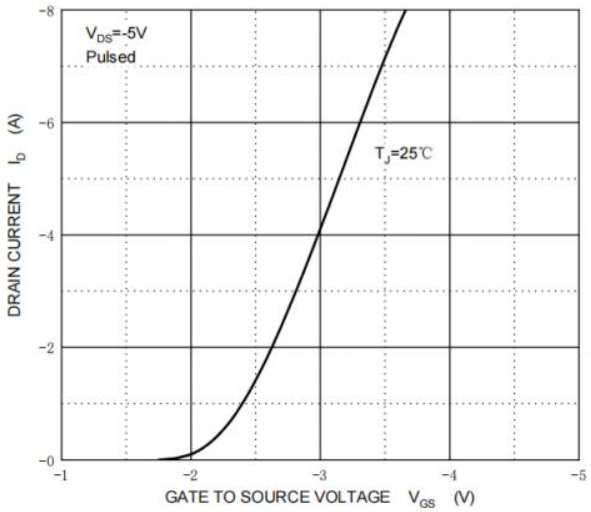
Typical Performance Characteristics

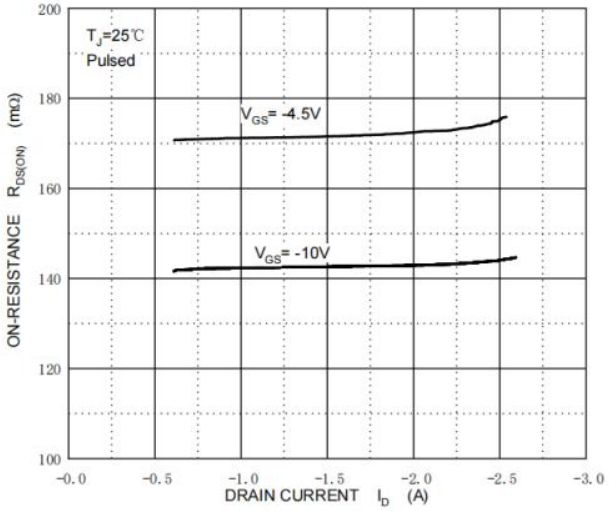
Output Characteristics



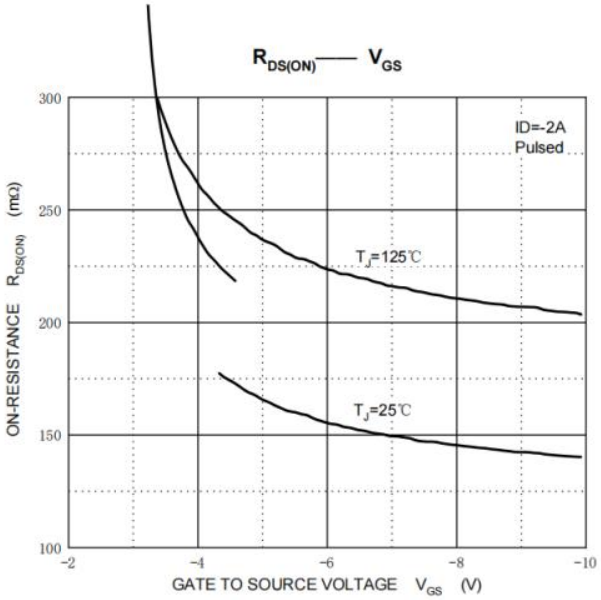
Transfer Characteristics



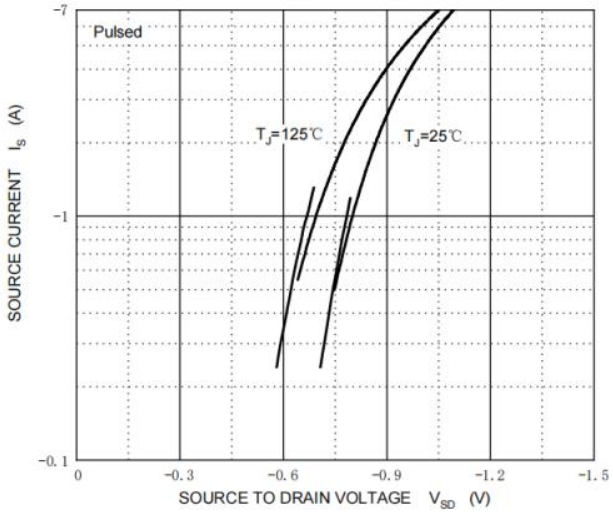
$R_{DS(ON)}$ — I_D



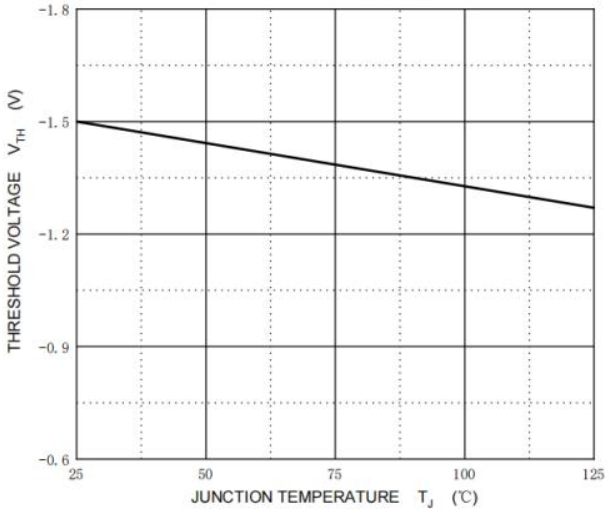
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



Threshold Voltage



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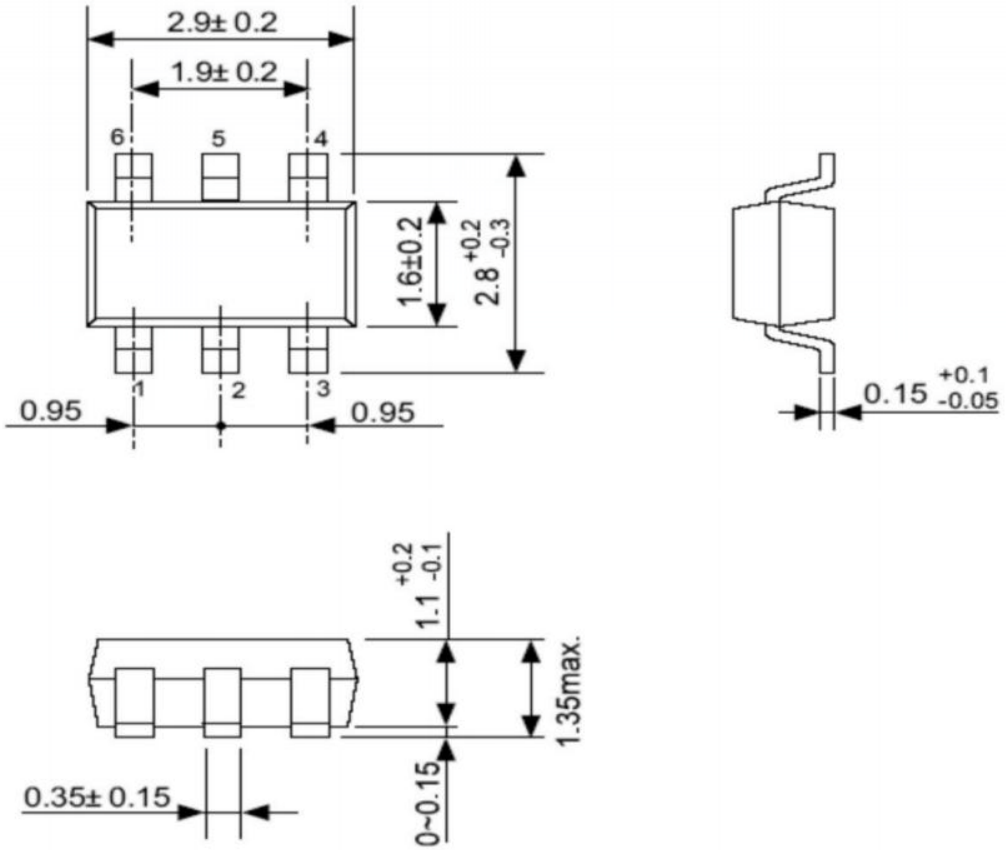
SOT23-6 PACKAGE INFORMATION



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